

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

iROBOT CORPORATION,
Plaintiff
v.
BISSELL HOMECARE, INC. and
MATSUTEK ENTERPRISES CO., LTD.,
Defendants.

Civil Action No. 1:17-cv-10649

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff iRobot Corporation (“iRobot”), by and through its attorneys, brings this complaint for patent infringement and demand for jury trial against Bissell Homecare, Inc. (“Bissell”) and Matsutek Enterprises Co., Ltd. (“Matsutek”) (collectively, the “Defendants”) and alleges as follows:

NATURE OF THE ACTION

1. This action for patent infringement arises under the laws of the United States, Title 35 of the United States Code, 35 U.S.C. § 1 *et seq.*

PARTIES

2. Plaintiff iRobot Corporation is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 8 Crosby Drive, Bedford, Massachusetts 01730.

3. On information and belief, Defendant Bissell Homecare, Inc. (“Bissell”) is a corporation organized under the laws of the State of Michigan, having a principal place of business located at 2345 Walker Ave., NW, Grand Rapids, Michigan 49544.

4. On information and belief, Matsutek Enterprises Co., Ltd. is corporation organized under the laws of the Republic of China, having a principal place of business located at 2F, 2, Lane 15 Tzu Chiang Street, New Taipei City, Taiwan 23678.

JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has personal jurisdiction over Bissell because, *inter alia*, upon information and belief, Bissell has purposefully availed itself of the privileges of conducting business in this judicial district and has regularly and systematically transacted business in this district, directly or through intermediaries; Bissell has committed acts of patent infringement in this district; and Bissell has substantial and continuous contacts within this judicial district, at least due to soliciting customers from this judicial district via its own website, Bissell.com, as well as through third-party websites and/or sales via retail and wholesale stores in Massachusetts. Moreover, upon information and belief, Bissell has purposefully shipped its products into this district through established distribution channels and has placed its products into the stream of commerce with the knowledge and expectation that they will be purchased by consumers in this district.

7. This Court has personal jurisdiction over Matsutek because, *inter alia*, upon information and belief, Matsutek manufactures and/or imports infringing devices that are marketed and sold to Massachusetts consumers through a nationwide channel of distribution in the United States. Moreover, upon information and belief, Matsutek has purposefully and voluntarily placed infringing devices in the stream of commerce with the knowledge and expectation that the same will end up in, and be marketed, sold, and purchased in, Massachusetts. Upon information and

belief, Matsutek has entered into a business relationship with Bissell whereby Matsutek manufactures infringing devices and imports them into the United States so that Bissell can sell these infringing devices throughout the United States, including in Massachusetts.

8. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b).

SINGLE ACTION

9. This suit is commenced against Defendants pursuant to 35 U.S.C. § 299 because, *inter alia*, upon information and belief, Matsutek manufactures and/or imports infringing robotic vacuums for and on behalf of Bissell, who offers them for sale in the United States, and sells them in the United States, including in Massachusetts. Defendants are therefore part of the same manufacturing and distribution chain and share accused product lines and products involving iRobot's patented technologies.

10. Accordingly, Defendants are jointly and severally liable for patent infringement relating to the infringing robotic vacuums made, used, imported, offered for sale, sold, and/or used in the United States by either or both of them. iRobot's right to relief against each of these Defendants arises out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, importing into the United States, offering for sale, and/or selling of the same accused robotic vacuums. Questions of fact common to both of these Defendants will arise in this action, including as to whether the accused products infringe the asserted patents. Thus, joinder of the Defendants is proper under 35 U.S.C. § 299.

THE PATENTS-IN-SUIT

The '308 Patent

11. On December 26, 2006, United States Patent No. 7,155,308 (“the '308 Patent”), entitled “Robot Obstacle Detection System,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 10/453,202, filed on June 3, 2003. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '308 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

12. The '308 Patent relates to a robot obstacle detection system that includes a robot housing that navigates with respect to a surface, and a sensor subsystem. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a photon detector having a defined field of view which intersects the field of emission of the emitter at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

The '233 Patent

13. On May 26, 2015, United States Patent No. 9,038,233 (“the '233 Patent”), entitled “Autonomous Floor-Cleaning Robot,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 13/714,546, filed on December 14, 2012. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '233 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

14. The '233 Patent relates to an autonomous floor-cleaning robot that includes a cleaning head subsystem with a dual-stage brush assembly having counter-rotating, asymmetric

brushes. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the cleaning head subsystem.

The '090 Patent

15. On July 2, 2013, United States Patent No.8,474,090 (“the '090 Patent”), entitled “Autonomous Floor-Cleaning Robot,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 12/201,554, filed on August 29, 2008. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '090 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

16. The '090 Patent relates to a floor cleaning robot that includes a housing, wheels, and a motor driving the wheels to move the robot across a floor, a control module disposed within the housing and directing movement of the robot across the floor, a sensor for detecting and communicating obstacle information to the control module so that the control module can cause the robot to react to the obstacle, a removable bin disposed at least partially within the housing and receiving particulates, a first rotating member directing particulates toward the bin, and a second rotating member cooperating with the first rotating member to direct particulates toward the bin.

The '553 Patent

17. On December 3, 2013, United States Patent No. 8,600,553 (“the '553 Patent”), entitled “Coverage Robot Mobility,” was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 11/758,289, filed on June 5, 2007. iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '553 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

18. The '553 Patent relates to an autonomous coverage robot that includes a drive system, a bump sensor, and a proximity sensor. The drive system is configured to maneuver the robot according to a heading and a speed setting. The bump sensor is responsive to a collision of the robot with an obstacle in a forward direction. A method of navigating an autonomous coverage robot with respect to an object on a floor includes the robot autonomously traversing the floor in a cleaning mode at a full cleaning speed. Upon sensing a proximity of the object forward of the robot, the robot reduces the cleaning speed to a reduced cleaning speed while continuing towards the object until the robot detects a contact with the object. Upon sensing contact with the object, the robot turns with respect to the object and cleans next to the object.

The '490 Patent

19. On October 26, 2004, United States Patent No. 6,809,490 ("the '490 Patent"), entitled "Method and System for Multi-Mode Coverage for an Autonomous Robot," was duly and legally issued by the United States Patent and Trademark Office from U.S. Patent Application Serial No. 10/167,851, filed on June 12, 2002. iRobot is the owner, by valid assignment, of the entire right, title, and interest in and to the '490 Patent, including the right to assert all causes of action arising under the patent and the right to any remedies for infringement of the patent.

20. The '490 Patent relates to a control system for a mobile robot to effectively cover a given area by operating in a plurality of modes. In an exemplary embodiment, an autonomous mobile robot can operate in an obstacle following mode, a random bounce mode, or in a spot coverage mode. Additionally, the '490 Patent describes a behavior based architecture for the control system to ensure full coverage.

BACKGROUND

21. iRobot (formerly IS Robotics, Inc.) was founded in 1990 by Massachusetts Institute of Technology roboticists with the vision of making practical robots a reality. The company has developed some of the world's most important robots, and has a rich history steeped in innovation.

22. iRobot is the leader in home robotic cleaning devices, with products delivering convenient, customized, powerful cleaning assistance. Among other product offerings, iRobot develops, manufactures, and sells the well-known Roomba® line of products, which have been recognized as a market leader in robotic vacuum cleaning as well as highly preferred Braava® branded products.

23. iRobot has extensive involvement in the U.S. market, including the Massachusetts market, with its innovative robotic vacuum cleaning devices. iRobot employs hundreds of persons in the United States who are dedicated to the design, research, development, testing, quality control, and customer care of its robotic vacuum cleaning devices, and related accessories for U.S. customers.

24. Defendants compete directly with iRobot.

25. On information and belief, Matsutek manufactures robotic vacuum cleaning devices for Bissell, including, but not limited to, Bissell's SmartClean Model 1605C and Model 1974 robotic vacuums,¹ which, as explained below, infringe one or more claims of each of iRobot's '308 Patent, '233 Patent, '090 Patent, '553 Patent, and '490 Patent (the "Asserted Patents").

26. To the extent facts learned in discovery show that one or both Defendants' infringement of a claim of an Asserted Patent is or has been willful, including following the filing

¹ These exemplary infringing products are hereinafter referred to as the "Accused Products."

of this Complaint, iRobot reserves the right to request such a finding at the time of trial, or as may otherwise be allowed by the Court.

COUNT I: INFRINGEMENT OF THE '308 PATENT BY BISSELL

27. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 26 of this Complaint as though fully set forth herein.

28. Upon information and belief, Bissell has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

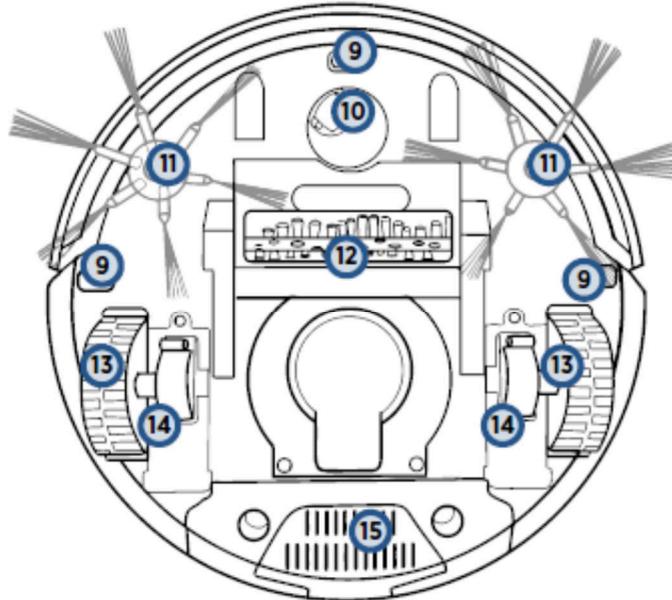
29. For example, on information and belief, Bissell's SmartClean Model 1974 robotic vacuum, used by Bissell and/or sold and offered for sale by Bissell, including at its website, infringes claim 1 of the '308 Patent; this claim recites:

A sensor subsystem for an autonomous robot which rides on a surface, the sensor subsystem comprising: an optical emitter which emits a directed optical beam having a defined field of emission; a photon detector having a defined field of view which intersects the field of emission of the emitter at a region; and a circuit in communication with the detector providing an output when an object is not present in the region thereby re-directing the autonomous robot.

30. On information and belief, Bissell's Model 1974 robotic vacuum is an autonomous robot that rides on a surface such as a floor. It includes sensor subsystems that comprise at least an optical emitter that emits an optical beam with a defined field of emission and a photon detector whose field of view intersects with this field of emission. On information and belief, the sensor subsystem also includes a circuit in communication with the detector that provides a signal when an object (such as the floor) is not present in this region of intersection such that the robot is re-directed. This behavior and its relation to the Model 1974's "cliff detectors" is depicted in a video

provided on Bissell's website.² Indeed, the "cliff detector" sensor subsystem components are depicted in the image of the Model 1974 robotic vacuum below, labelled as component 9:³

- 1 Contact Points for automatic charging
- 2 Top Cover (Dust Bin inside)
- 3 DC Jack
- 4 Power Switch
- 5 Control Panel and LED Display
- 6 Bumper
- 7 IR Receiver (for remote & docking station)
- 8 Docking Station with LED Control Panel
- 9 Cliff Sensors
- 10 Front Wheel
- 11 Edge-Cleaning Brushes
- 12 Brush Roll
- 13 Rear Wheels
- 14 Wheel Cover Plates
- 15 Battery Cover Plate



31. Furthermore, upon information and belief, Bissell has induced and continues to induce infringement of at least claim 1 of the '308 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the SmartClean Model 1974.

32. Upon information and belief, Bissell's customers and/or end users have directly infringed and are directly infringing claim 1 of the '308 Patent. Bissell has actual knowledge of the '308 Patent at least as of service of this Complaint. Bissell is knowingly inducing its customers

² See, e.g., SmartClean Robot Features and Benefits Video (<https://www.youtube.com/embed/9CyGPJ5C1nw?rel=0&autoplay=1>) linked from the Bissell product web page, <https://www.bissell.com/smartclean-robotic-vacuum-1974> (last visited April 12, 2017). Hereinafter, the "SmartClean Robot Features and Benefits Video."

³ See, e.g., SmartClean Robotic Vacuum, User Guide 1974 Series, https://www.bissell.com/~media/site%20us/documents/user%20guides/1974/bissell_user_guide_1974_smartclean_robot.pdf?la=en (last visited April 12, 2017). Hereinafter, the "SmartClean User Guide."

and/or end users to directly infringe the '308 Patent through, for example, their use of the SmartClean Model 1974, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Bissell's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '308 Patent.⁴

33. Upon information and belief, Bissell has committed the foregoing infringing activities without license from iRobot.

34. As a result of Bissell's infringement of the '308 Patent iRobot has suffered and will continue to suffer damage.

35. Bissell's continued infringement of iRobot's patent rights under the '308 Patent will irreparably harm iRobot.

36. The acts of infringement by Bissell will continue unless enjoined by this Court.

COUNT II: INFRINGEMENT OF THE '308 PATENT BY MATSUTEK

37. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 36 of this Complaint as though fully set forth herein.

38. Upon information and belief, Matsutek has directly infringed, and continues to directly infringe, the '308 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Bissell, including, for example, the SmartClean Model 1974. These Accused Products infringe at least claim 1 of the '308 Patent as explained above in

⁴ See, e.g., Bissell product web page and linked resources, <https://www.bissell.com/smartclean-robotic-vacuum-1974> (last visited April 12, 2017). Hereinafter, the "SmartClean Product Web Page."

paragraphs 28 – 30 with respect to Bissell’s direct infringement, which are incorporated herein by reference.

39. Upon information and belief, Matsutek has committed the foregoing infringing activities without license from iRobot.

40. As a result of Matsutek’s infringement of the ’308 Patent iRobot has suffered and will continue to suffer damage.

41. Matsutek’s continued infringement of iRobot’s patent rights under the ’308 Patent will irreparably harm iRobot.

42. The acts of infringement by Matsutek will continue unless enjoined by this Court.

COUNT III: INFRINGEMENT OF THE ’233 PATENT BY BISSELL

43. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 42 of this Complaint as though fully set forth herein.

44. Upon information and belief, Bissell has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’233 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

45. For example, on information and belief, Bissell’s SmartClean Model 1974 robotic vacuum, used by Bissell and/or sold and offered for sale by Bissell, including at its website, infringes claim 1 of the ’233 Patent; this claim recites:

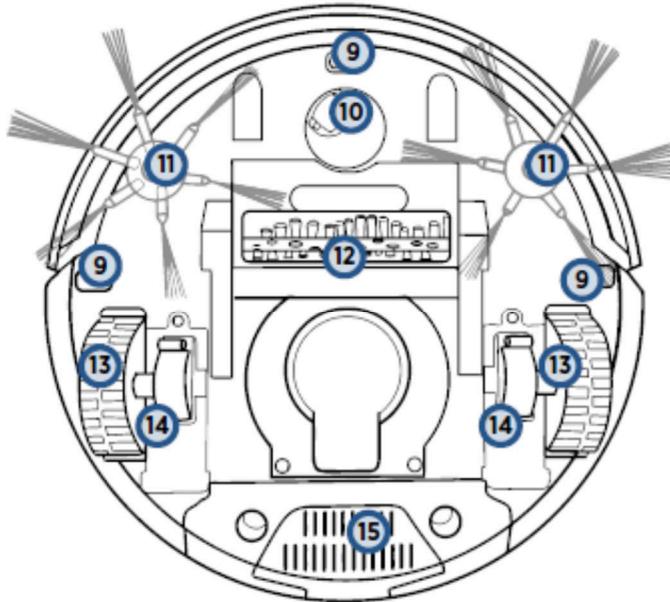
A self-propelled floor-cleaning robot comprising a housing defining a housing perimeter; a powered primary brush assembly disposed within the housing perimeter and positioned to engage a floor surface, the primary brush assembly being configured to rotate about an axis generally parallel to the floor surface; a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface; and a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter, the side brush being configured to rotate about an axis generally perpendicular to the floor surface and to rotate in

a direction to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly, the side brush having bundles of bristles and being positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, the gap being configured to prevent occlusion of the cliff detector beam during at least part of the rotation of the side brush around the axis; a particulate receptacle positioned to receive and collect particulates brushed from the floor surface by the primary brush assembly and the powered side brush; an obstacle detector responsive to obstacles encountered by the robot; and a control circuit in electrical communication with a motor drive and configured to control the motor drive to maneuver the robot about detected obstacles across the floor surface during a floor-cleaning operation.

46. On information and belief, the Bissell SmartClean Model 1974 robotic vacuum is a self-propelled floor-cleaning robot comprising a housing which defines a housing perimeter. On information and belief, it includes a powered primary brush assembly within this housing in a position such that it engages a floor surface, and the brush is configured to rotate about an axis that is generally parallel to the floor. On information and belief, it also includes a cliff detector which emits a beam toward the floor surface in order to respond to a falling edge of the floor surface. On information and belief, it also includes a side brush which extends beyond the housing perimeter, which rotates about an axis generally perpendicular to the floor surface to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly. The aforementioned primary brush, cliff detector, and side brush are all visible in the image of a Bissell SmartClean Model 1974 robotic vacuum below, labelled as components 12, 9, and 11, respectively:⁵

⁵ See, e.g., SmartClean User Guide.

- 1 Contact Points for automatic charging
- 2 Top Cover (Dust Bin inside)
- 3 DC Jack
- 4 Power Switch
- 5 Control Panel and LED Display
- 6 Bumper
- 7 IR Receiver (for remote & docking station)
- 8 Docking Station with LED Control Panel
- 9 Cliff Sensors
- 10 Front Wheel
- 11 Edge-Cleaning Brushes
- 12 Brush Roll
- 13 Rear Wheels
- 14 Wheel Cover Plates
- 15 Battery Cover Plate



47. As can be seen in the image above, the side brush (11) has bundles of bristles. On information and belief, these bundles of bristles are positioned such that the bundles pass between the cliff detector (9) and floor surface during rotation, and the bundles are separated by a gap configured to prevent occlusion of the cliff detector beam.

48. On information and belief, the Bissell SmartClean Model 1974 also includes a particulate receptacle that is positioned to receive the particulates brushed from the floor surface by the aforementioned brushes, as shown in the following images from the Bissell SmartClean Model 1974 product web page:⁶

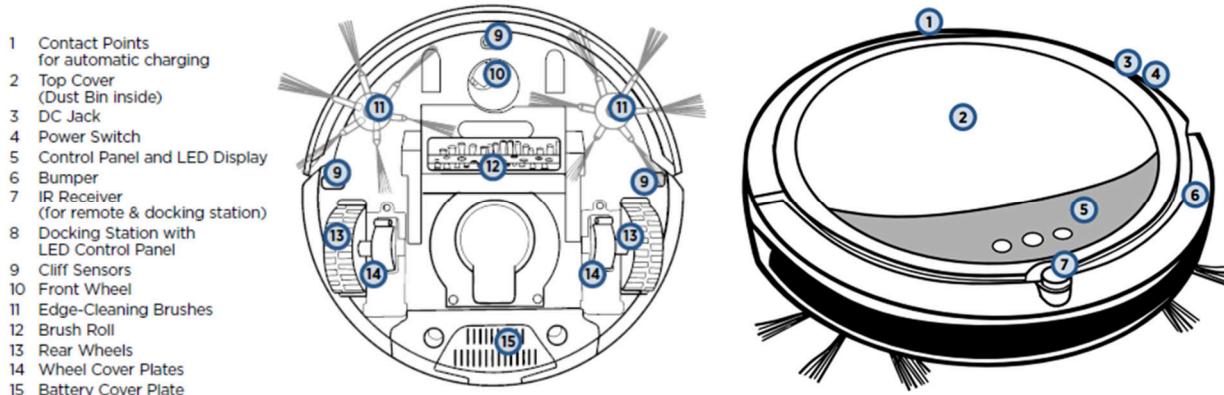
⁶ See, e.g., SmartClean Product Web Page.



49. On information and belief, the Bissell SmartClean Model 1974 also includes an obstacle detector which is responsive to obstacles encountered, and a control circuit in electrical communication with a motor drive configured to maneuver the robot about detected obstacles during a floor-cleaning operation. An example of such an obstacle detector is visible in the image from the Bissell Model 1974 manual below, labelled as component 6.⁷ Additionally, the SmartClean Model 1974 web page explains that the robot contains a “navigation system [that] provides excellent coverage along edges, corners, even under furniture and other hard-to-reach places” and “Easily navigates under and around furniture, including tables, beds, and chairs.”⁸

⁷ See, e.g., SmartClean User Guide.

⁸ See, e.g., SmartClean Product Web Page.



50. Upon information and belief, Bissell has induced and continues to induce infringement of at least claim 1 of the '233 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the SmartClean Model 1974.

51. Upon information and belief, Bissell's customers and/or end users have directly infringed and are directly infringing claim 1 of the '233 Patent. Bissell has actual knowledge of the '233 Patent at least as of service of this Complaint. Bissell is knowingly inducing its customers and/or end users to directly infringe the '233 Patent through, for example, their use of the SmartClean Model 1974, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Bissell's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '233 Patent.⁹

52. Upon information and belief, Bissell has committed the foregoing infringing activities without license from iRobot.

⁹ See, e.g., SmartClean Product Web Page and linked resources.

53. As a result of Bissell's infringement of the '233 Patent iRobot has suffered and will continue to suffer damage.

54. Bissell's continued infringement of iRobot's patent rights under the '233 Patent will irreparably harm iRobot.

55. The acts of infringement by Bissell will continue unless enjoined by this Court.

COUNT IV: INFRINGEMENT OF THE '233 PATENT BY MATSUTEK

56. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 55 of this Complaint as though fully set forth herein.

57. Upon information and belief, Matsutek has directly infringed, and continues to directly infringe, the '233 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Bissell, including, for example, the SmartClean Model 1974. These Accused Products infringe at least claim 1 of the '233 Patent as explained above in paragraphs 44 – 49 with respect to Bissell's infringement, which are incorporated herein by reference.

58. Upon information and belief, Matsutek has committed the foregoing infringing activities without license from iRobot.

59. As a result of Matsutek's infringement of the '233 Patent iRobot has suffered and will continue to suffer damage.

60. Matsutek's continued infringement of iRobot's patent rights under the '233 Patent will irreparably harm iRobot.

61. The acts of infringement by Matsutek will continue unless enjoined by this Court.

COUNT V: INFRINGEMENT OF THE '090 PATENT BY BISSELL

62. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 61 of this Complaint as though fully set forth herein.

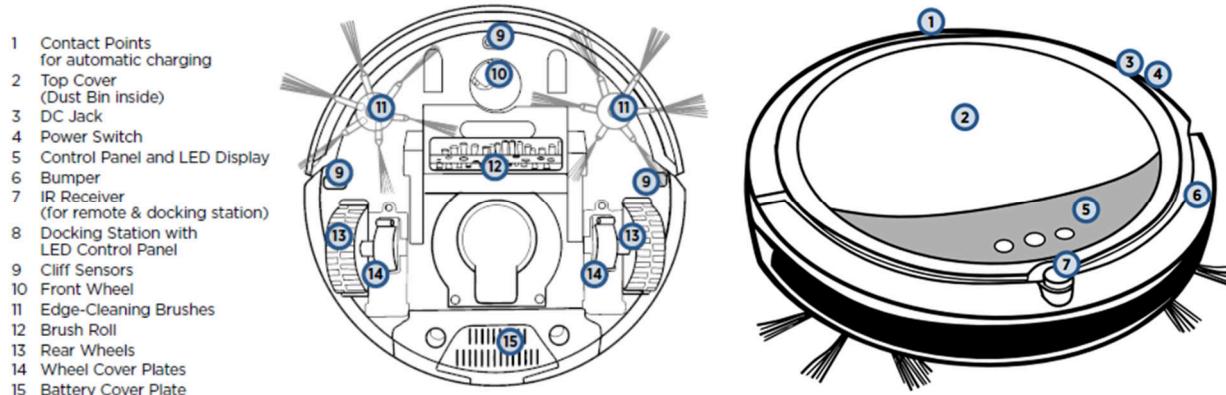
63. Upon information and belief, Bissell has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '090 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

64. For example, on information and belief, Bissell's SmartClean Model 1974 robotic vacuum, used by Bissell and/or sold and offered for sale by Bissell at its website, infringes claim 1 of the '090 Patent; this claim recites:

A floor cleaning robot comprising: a housing and a chassis; wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end; a control module disposed within the housing and directing movement of the floor cleaning robot across the floor; at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle; a removable bin disposed at least partially within the housing and configured to receive particulates; and a first rotating member configured to direct particulates toward the bin, wherein one of the wheels is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis, wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis, and wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.

65. On information and belief, Bissell's SmartClean Model 1974 robotic vacuum is a floor cleaning robot that comprises a housing, chassis, and wheels with at least one motor, disposed at least partially within the housing, to drive the wheels to move the Accused Products across a floor. The motorized driving of the wheels can be seen, *e.g.*, in the SmartClean Robot Features and Benefits Video. The housing and chassis are shown in the right and left images below from the robot's user manual:¹⁰

¹⁰ See, *e.g.*, SmartClean User Guide.



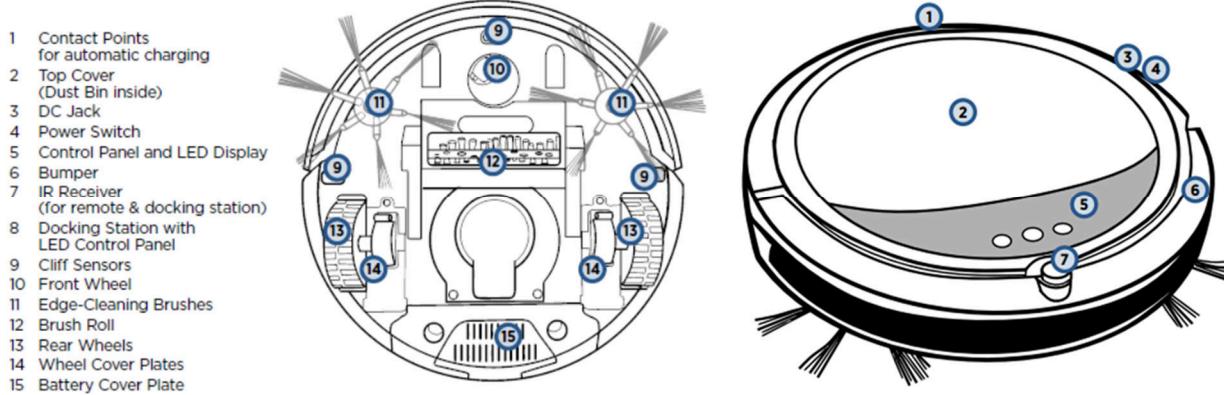
66. On information and belief, each of the aforementioned wheels is attached to the chassis via an arm with distal and proximal ends. On information and belief, the wheels are rotatably attached to the distal end of each arm, the proximal end of each arm is pivotably attached to the chassis, and the wheels are biased to an extended position away from the robot by a spring extending between the arm and the robot chassis. On information and belief, during cleaning, the weight of the Bissell SmartClean Model 1974 overcomes this biasing force from the spring. In a video included on the SmartClean Model 1974's product web page, this wheel arrangement and the biasing action from the spring is visible.¹¹

67. On information and belief, the Bissell SmartClean Model 1974 also comprises a control module disposed within the housing which directs movement of the robot. On information and belief, it also comprises at least one sensor for detecting an obstacle information and communicating obstacle information to the control module so that the control module can cause the Accused Product to react.¹² Indeed, the product web page for this robot notes that the robot includes a "navigation system [that] provides excellent coverage along edges, corners, even under furniture and other hard-to-reach places" and "Easily navigates under and around furniture,

¹¹ See, e.g., SmartClean Error Codes Video.

¹² See, e.g., SmartClean Robot Features and Benefits Video.

including tables, beds, and chairs.”¹³ Additionally, for example, sensors are depicted in the user guide for the SmartClean Model 1974, labelled as components 6 and 9 in the image below.¹⁴



68. On information and belief, the SmartClean Model 1974 also comprises a removable bin disposed at least partially within the housing and configured to receive particles, and a rotating member configured to direct particulates toward the bin, as shown in the following images from the Bissell SmartClean Model 1974 product web page:¹⁵



¹³ SmartClean Product Web Page.

¹⁴ See, e.g., SmartClean User Guide.

¹⁵ See, e.g., SmartClean Product Web Page.

69. Upon information and belief, Bissell has induced and continues to induce infringement of at least claim 1 of the '090 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the SmartClean Model 1974.

70. Upon information and belief, Bissell's customers and/or end users have directly infringed and are directly infringing claim 1 of the '090 Patent. Bissell has actual knowledge of the '090 Patent at least as of service of this Complaint. Bissell is knowingly inducing its customers and/or end users to directly infringe the '090 Patent through, for example, their use of the SmartClean Model 1974, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Bissell's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '090 Patent.¹⁶

71. Upon information and belief, Bissell has committed the foregoing infringing activities without license from iRobot.

72. As a result of Bissell's infringement of the '090 Patent iRobot has suffered and will continue to suffer damage.

73. Bissell's continued infringement of iRobot's patent rights under the '090 Patent will irreparably harm iRobot.

74. The acts of infringement by Bissell will continue unless enjoined by this Court.

¹⁶ See, e.g., SmartClean Product Web Page and linked resources.

COUNT VI: INFRINGEMENT OF THE '090 PATENT BY MATSUTEK

75. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 74 of this Complaint as though fully set forth herein.

76. Upon information and belief, Matsutek has directly infringed, and continues to directly infringe, the '090 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Bissell, including, for example, the SmartClean Model 1974. These Accused Products infringe at least claim 1 of the '090 Patent as explained above in paragraphs 63 – 68 with respect to Bissell's direct infringement, which are incorporated herein by reference.

77. Upon information and belief, Matsutek has committed the foregoing infringing activities without license from iRobot.

78. As a result of Matsutek's infringement of the '090 Patent iRobot has suffered and will continue to suffer damage.

79. Matsutek's continued infringement of iRobot's patent rights under the '090 Patent will irreparably harm iRobot.

80. The acts of infringement by Matsutek will continue unless enjoined by this Court.

COUNT VII: INFRINGEMENT OF THE '553 PATENT BY BISSELL

81. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 80 of this Complaint as though fully set forth herein.

82. Upon information and belief, Bissell has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the '553 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

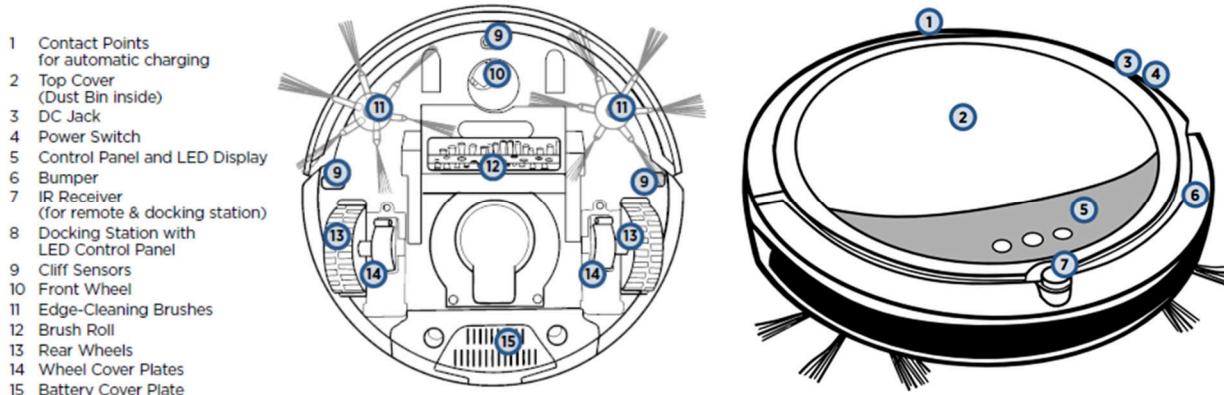
83. For example, on information and belief, Bissell's SmartClean Model 1974 robotic vacuum, used by Bissell and/or sold and offered for sale by Bissell, including at its website, infringes claim 1 of the '553 Patent; this claim recites:

An autonomous coverage robot comprising: a drive system configured to maneuver the robot according to a heading setting and a speed setting; a bump sensor responsive to a collision of the robot with an obstacle in a forward direction; and a proximity sensor responsive to a potential obstacle forward of the robot; wherein the drive system is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting; wherein the drive system is configured to increase the speed setting if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting; and wherein the drive system is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.

84. On information and belief, Bissell's SmartClean Model 1974 is an autonomous coverage robot that comprises a drive system configured to maneuver the robot according to a heading setting and a speed setting.¹⁷ On information and belief, Bissell's SmartClean Model 1974 comprises a bump sensor (responsive to a collision of the robot with an obstacle in a forward direction) and a proximity sensor (responsive to a potential obstacle forward of the robot). For example, the bump sensor (component 6) and drive system (*e.g.*, component 13) are all visible in the images of the Bissell SmartClean Model 1974 from its user guide below.¹⁸

¹⁷ See, *e.g.*, SmartClean Robot Features and Benefits Video.

¹⁸ See, *e.g.*, SmartClean User Guide.



85. On information and belief, the drive system is configured to, *inter alia*, (1) reduce the robot's speed setting in response to an obstacle detection sensor from the proximity sensor while continuing to advance the robot according to the heading setting and (2) increase the robot's speed if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting. On information and belief, the drive system is also configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle. As explained in the user guide, the robot can operate such that it "will move in diagonal paths around the room, adjusting its direction as obstacles are encountered."¹⁹

86. Upon information and belief, Bissell has induced and continues to induce infringement of at least claim 1 of the '553 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States the Accused Products, such as the SmartClean Model 1974.

87. Upon information and belief, Bissell's customers and/or end users have directly infringed and are directly infringing claim 1 of the '553 Patent. Bissell has actual knowledge of

¹⁹ SmartClean User Guide.

the '553 Patent at least as of service of this Complaint. Bissell is knowingly inducing its customers and/or end users to directly infringe the '553 Patent through, for example, their use of the SmartClean Model 1974, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Bissell's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '553 Patent.²⁰

88. Upon information and belief, Bissell has committed the foregoing infringing activities without license from iRobot.

89. As a result of Bissell's infringement of the '553 Patent iRobot has suffered and will continue to suffer damage.

90. Bissell's continued infringement of iRobot's patent rights under the '553 Patent will irreparably harm iRobot.

91. The acts of infringement by Bissell will continue unless enjoined by this Court.

COUNT VIII: INFRINGEMENT OF THE '553 PATENT BY MATSUTEK

92. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 91 of this Complaint as though fully set forth herein.

93. Upon information and belief, Matsutek has directly infringed, and continues to directly infringe, the '553 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Bissell, including, for example, the SmartClean Model 1974. These Accused Products infringe at least claim 1 of the '553 Patent as explained above in

²⁰ See, e.g., SmartClean Product Web Page and linked resources.

paragraphs 82 – 85 with respect to Bissell’s infringement, which are incorporated herein by reference.

94. Upon information and belief, Matsutek has committed the foregoing infringing activities without license from iRobot.

95. As a result of Matsutek’s infringement of the ’553 Patent iRobot has suffered and will continue to suffer damage.

96. Matsutek’s continued infringement of iRobot’s patent rights under the ’553 Patent will irreparably harm iRobot.

97. The acts of infringement by Matsutek will continue unless enjoined by this Court.

COUNT IX: INFRINGEMENT OF THE ’490 PATENT BY BISSELL

98. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 97 of this Complaint as though fully set forth herein.

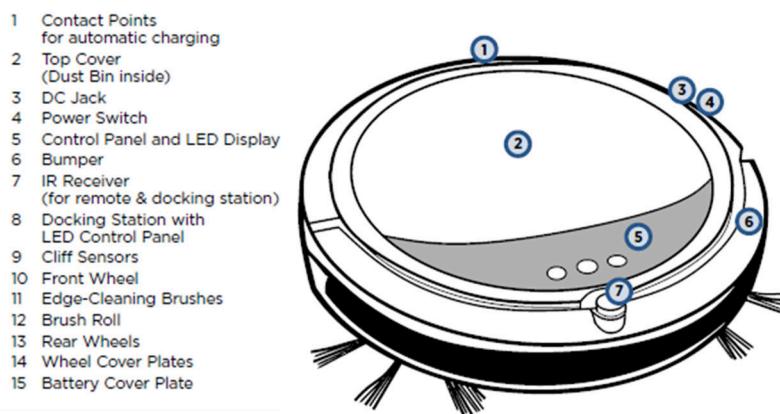
99. Upon information and belief, Bissell has infringed and continues to infringe, either literally or under the doctrine of equivalents, at least claim 1 of the ’490 Patent pursuant to 35 U.S.C. § 271(a) by making, using, offering to sell and/or selling in the United States, and/or importing into the United States, at least the Accused Products.

100. For example, on information and belief, Bissell’s SmartClean Model 1974 robotic vacuum, used by Bissell and/or sold and offered for sale by Bissell at its website, infringes claim 1 of the ’490 Patent; this claim recites:

A mobile robot comprising: (a) means for moving the robot over a surface; (b) an obstacle detection sensor; (c) and a control system operatively connected to said obstacle detection sensor and said means for moving; (d) said control system configured to operate the robot in a plurality of operational modes and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor, said plurality of operational modes comprising: a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle

after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot.

101. On information and belief, the Bissell SmartClean Model 1974 is a mobile robot that comprises a means for moving the robot over a surface, an obstacle detection sensor, and a control system operatively connected to the obstacle detection sensor and the means for moving.²¹ The robot and at least one of the obstacle detection sensors (labelled as component 6) are visible in the image below from the SmartClean Model 1974 user guide:²²



102. On information and belief, the control system is configured to operate the robot in a plurality of modes, selecting among these modes in real time in response to signals generated by the obstacle sensor. On information and belief, these modes include a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot. These modes are listed in the Bissell SmartClean Model 1974 user guide.²³

²¹ See, e.g., SmartClean Robot Features and Benefits Video.

²² See, e.g., SmartClean User Guide.

²³ See, e.g., SmartClean User Guide.

Selecting the Navigation	Control Panel Display	What It Does
1st Press		Spiral - Robot will work in circles until it encounters an obstacle (once it encounters an obstacle it will switch to AUTO mode)
2nd Press		Along the Wall - Robot will clean along walls and edges
3rd Press		"Z" Formation - Robot will move up and down the room following a zig-zag path
4th Press		Diagonal Path - Robot will move in diagonal paths around the room, adjusting its direction as obstacles are encountered
5th Press		Auto - Robot will cycle through all modes (Spiral, Along the Wall, "Z" Formation, and Diagonal Path)

103. Upon information and belief, Bissell has induced and continues to induce infringement of at least claim 1 of the '490 Patent pursuant to 35 U.S.C. § 271(b), by actively and knowingly inducing, directing, causing, and encouraging others, including, but not limited to, its customers and/or end users, to make, use, sell, and/or offer to sell in the United States, and/or import into the United States the Accused Products, such as the SmartClean Model 1974.

104. Upon information and belief, Bissell's customers and/or end users have directly infringed and are directly infringing claim 1 of the '490 Patent. Bissell has actual knowledge of the '490 Patent at least as of service of this Complaint. Bissell is knowingly inducing its customers and/or end users to directly infringe the '490 Patent through, for example, their use of the SmartClean Model 1974, with the specific intent to encourage such infringement, and knowing that the induced acts constitute patent infringement. Bissell's inducement includes, for example, providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe the '490 Patent.²⁴

²⁴ See, e.g., SmartClean Product Web Page and linked resources.

105. Upon information and belief, Bissell has committed the foregoing infringing activities without license from iRobot.

106. As a result of Bissell's infringement of the '490 Patent iRobot has suffered and will continue to suffer damage.

107. Bissell's continued infringement of iRobot's patent rights under the '490 Patent will irreparably harm iRobot.

108. The acts of infringement by Bissell will continue unless enjoined by this Court.

COUNT X: INFRINGEMENT OF THE '490 PATENT BY MATSUTEK

109. iRobot hereby incorporates by reference its allegations contained in paragraphs 1 through 108 of this Complaint as though fully set forth herein.

110. Upon information and belief, Matsutek has directly infringed, and continues to directly infringe, the '490 Patent by importing into the United States the Accused Products that it manufactures for and on behalf of Bissell, including, for example, the SmartClean Model 1974. These Accused Products infringe at least claim 1 of the '490 Patent as explained in paragraphs 99 –102 above with respect to Bissell's infringement, which are incorporated herein by reference.

111. Upon information and belief, Matsutek has committed the foregoing infringing activities without license from iRobot.

112. As a result of Matsutek's infringement of the '490 Patent iRobot has suffered and will continue to suffer damage.

113. Matsutek's continued infringement of iRobot's patent rights under the '490 Patent will irreparably harm iRobot.

114. The acts of infringement by Matsutek will continue unless enjoined by this Court.

PRAYER FOR RELIEF

WHEREFORE, iRobot prays for judgment in its favor against Defendants, and granting relief as follows:

- A. For a judgment declaring that the Defendants have infringed the Asserted Patents;
- B. For a grant of an injunction pursuant to 35 U.S.C. § 283, enjoining the Defendants together with their respective officers, directors, agents, servants, employees, and attorneys, and upon those persons in active concert or participation with them from further acts of infringement;
- C. For an award to iRobot of compensatory damages as a result of the Defendants' infringement of the Asserted Patents, together with interest and costs, and in no event less than a reasonable royalty;
- D. For a judgment declaring that this case is exceptional and awarding iRobot its expenses, costs, and attorneys' fees in accordance with 35 U.S.C. § 285 and Rule 54(d) of the Federal Rules of Civil Procedure;
- E. For such other and further relief as the Court deems just and proper.

DEMAND FOR A JURY TRIAL

iRobot hereby demands a trial by jury in this action.

Respectfully submitted,

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Counsel for Plaintiff iRobot Corp.

Dated: April 17, 2017